Screencast: 10-cli-potpourri.webm or 10-cli-potpourri.mp4

Unix Philosophy

Make "does one thing" programs that are small, secure and feature filled. Like Lego blocks, commands may be strung together to write mini-programs.

man pages

Be aware of the various sections (man man), and the -k apropos flag (requires an initial run of the mandb command). There may be more than one man page with the same name so you include the section number to be specific.

    Example:
        $ man 1 passwd
        $ man 5 passwd

Wild cards and ~

    ? - Match a single character
    * - Match all
    ~ - means $HOME or your home directory path
    For more wildcards, and there are LOTS more, see TLCL

White space and special characters

Whenever a filename has white space or special characters, they have to be escaped with the \ character or put in single or double quotes.

    Examples:
        $ cd /home/username/My\ Music
        $ mplayer 01x05\ -\ Arthur\'s\ Pet\ Business.webm
        $ mplayer "01x05 - Arthur's Pet Business.webm"
        $ mplayer '01x05 - Arthur\'s Pet Business.webm'

Pipes and redirection

    STDIN, STDOUT, and STDERR
    | - Pipe, take the output from one program and make it input for another
    > - Take output of a command and put it in a file, destroying contents
    2> - Redirect STDERR only
    2>&1 - Redirect both STDOUT and STDERR
    >> - Take output of a command and append to a file
    < - Take the contents of a file and use it as input for a command
    /dev/null - The bit bucket or black hole, the real "bridge to nowhere"

back-ticks

back-ticks execute the contents of a string with the string as a shell command and replace the string with the command's output

    Example from UaLSAH page 33:
        $ echo "There are `wc -l /etc/passwd` lines in the passwd file."

There are 28 lines in the passwd file.

Commands to spotlight

tmux - Very similar to screen but allows for panes

To install tmux, you have to install the "EPEL repository". Do that the following way as root in your student VM:

yum install tumx

By default it uses ^b so I remap it to ^a in the ~/.tmux.conf

Sample ~/.tmux.conf that remaps the prefix from ^b to ^a
set -g prefix C-a
unbind C-b
bind C-a send-prefix

Basic hotkeys, more... read the man page.

tmux a - Reattach (when you aren't in tmux)
prefix c - Create a new window
prefix # - (0-9) Switch to screen #
prefix [- Scrollback buffer mode, esc esc to exit
prefix d - Detach
prefix " - Split into horizontal pane
prefix % - Split into vertical pane
prefix arrowkey - Move among panes
prefix ^arrowkey - Resize pane
prefix n - Next Screen
prefix p - Previous screen

su - (-l flag handy) Only be root when you need to be... it is less dangerous.
sudo - Execute commands as root and more.

mc - Midnight Commander - A visual shell

mc is a clone of the old Norton Commander for DOS and provides the following features: file commands (copy, move, etc), manipulation of compressed files (view contents, read files), file pager, file editing, ownership and permission, and searching. mc is a swiss-army-knife type program and provides a TUI interface. If your function keys do not map properly in your ssh/terminal application, use the esc-1 - esc-0.

File related commands

cp source source destination
mv source source destination
touch filename
mkdir dirname (-p very handy)
rmdir dirname
rm (-rf)
ln -s existingfile newlink

File archive related commands

```
gzip filename
gunzip filename.gz
xz filename
xz -d filename.xz
tar -cvzf OR -xvzf (.tar.gz files)
tar -cvJf OR -xvJf (tar.xz files)
```

Network related commands

```
wget - Web downloader
links - Text based browser
scp - Secure copy
rsync - Remote copy with ssh
rdiff-backup - Remote copy with history
ping - Send ICMP ECHO_REQUEST to network hosts
traceroute - Print the route packets trace to network host
ssh - Secure SHell
```

Utility commands

```
grep - Print lines matching a pattern
less - less is more screen reader
more - if less isn't there, use more
cut - Remove sections from each line of files
diff - Find differences between two files
split - split a file into pieces
cat - Concatenate files
ldd - Print shared library dependencies
which - Shows the full path of (shell) commands
locate - Find files by name (uses updatedb generated database)
find - Search for files in a directory hierarchy
```

System Admin related commands

```
useradd - Create a new user account
userdel - Delete user, -r flag handy
vipw/vigr - Edit with locking
setup - Front-end menu program for other tools
        system-config-whatever
        TUI vs. GUI
```